

Claims

1. An aluminum alloy plate for use as a lithographic printing plate comprising, in wt%, Fe: 0.1 to 0.6 %; Si: 0.02 to 0.2 %; Cu: 0.001 to 0.02 %; Zn: 0.01 to 0.1 %; Mg: 0.005 to 0.1 %; Ti: 0.001 to 0.05 %, and the remainder aluminum and inevitable impurities, and wherein,

an average value of the crystal particle size is 60 μm or less in a direction perpendicular to the rolling direction.

2. The aluminum alloy plate for use as a lithographic printing plate of claim 1, further comprising a plurality of intermetallic compound particles in its metal structure, and wherein, a value of A/B is 0.2 or above in the case that in said intermetallic compound particles, A is a number of particles having an equivalent-circle diameter of 0.1 to 1.0 μm , and B is a total number of particles having a particle size of 0.1 or above.

3. The aluminum alloy plate for use as a lithographic printing plate of claim 1, further comprising a plurality of intermetallic compound particles in its metal structure, and wherein, a value of (D/E) x 100 is 0.20 or above in the case that in said intermetallic compound particles, D is an included amount of intermetallic compound particles having an equivalent circle diameter of 0.1 μm or above and less than 1.0 μm , and E is an included amount of particles above 1.0 μm .

4. The aluminum alloy plate for use as a lithographic printing plate of any of claims 1 to 3, wherein the included amounts of Cu, Fe, Zn, and Mg satisfy the relationship equation

$$0.15 \geq \text{Zn} + \text{Mg} - (\text{Fe}/10) - \text{Cu}.$$

5. The aluminum alloy plate for use as a lithographic printing plate of any of claims 1 to 4, wherein in the composition of said intermetallic compound particles having a

particle size of 0.1 μm or above, the value of C/B is 0.35 or above when C is a number of metastable phase particles having a ratio of Fe/Al of 0.6 or less, and B is a total number of intermetallic compound particles is B.

6. A method for producing an aluminum alloy plate for use as a lithographic printing plate having a composition, in wt%, of Fe: 0.1 to 0.6 %; Si: 0.02 to 0.2 %; Cu: 0.001 to 0.02 %; Zn: 0.01 to 0.1 %; Mg: 0.005 to 0.1 %; Ti: 0.001 to 0.05 %, and the remainder Al and inevitable impurities,

and an average value of the crystal particle size is 60 μm or less in a direction perpendicular to the rolling direction,

comprising the step of

carrying out a homogenization treatment for the alloy ingots of said composition at a temperature of 550°C or less, or carrying out a soaking treatment without carrying out a homogenization treatment and hot rolling.

7. The method for producing an aluminum alloy plate for use as a lithographic printing plate according to claim 6, wherein the included amounts of Cu, Fe, Zn and Mg satisfy the relationship equation

$$0.15 \geq \text{Zn} + \text{Mg} - (\text{Fe}/10) - \text{Cu}.$$

8. The method for producing an aluminum alloy plate for use as a lithographic printing plate according to claim 6 or 7, wherein the aluminum alloy plate for use as a lithographic printing plate comprises a plurality of intermetallic compound particles in its metal structure, and wherein, a value of A/B is 0.2 or above in the case that in said intermetallic compound particles, A is a number of particles having a corresponding circular diameter of 0.1 to 1.0 μm , and B is a total number of particles having a particle diameter of 0.1 or above.

9. The method for producing an aluminum alloy plate for use as a lithographic printing plate according to claim 6 or 7, wherein the aluminum alloy plate for use as a lithographic printing plate comprises a plurality of intermetallic compound particles in the metal structure, and wherein, a value of $(D/E) \times 100$ is 0.20 or above in the case that D is an included amount of intermetallic compound particles having a circular corresponding diameter of 0.1 μm or above and less than 1.0 μm , and E is an included amount of particles above 1.0 μm .

10. The method for manufacturing an aluminum alloy plate for use as a lithographic plate according to any one of claims 6 to 9, wherein in the composition of said intermetallic compound particles having a particle diameter of 0.1 μm or above, the value of C/B is 0.35 or above when C is a number of metastable phase particles having a ratio of Fe/Al of 0.6 or less, and B is a total number of intermetallic compound particles.

11. A lithographic printing plate wherein a surface of the aluminum alloy plate for use as a lithographic printing plate according to any one of claims 1 to 5 has been subjected to at least a surface roughening treatment and an anodic oxidation treatment, and a photosensitive layer is provided on said aluminum alloy plate.